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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 764,919	01.17.2001	Tara Jean Rybnicek	IMT-MagMotor	8182

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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05 21 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,919

Applicant(s)

RYBNICEK ET AL

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☒ Claim(s) 2 and 7-24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: In claim 1, line 17, should "impel" be ---impart---? Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boon et al. (US 4,992,685) in view of Zettler (US 5,600,190). Boon teaches an electromechanical actuator including: a magnetic core 2 having end faces 3-5 separated by an air gap (Fig. 1); a pivotably mounted driven member (armature 11) moving in an arc less than 360 degrees and attached to a stationary pivot point (motor shaft 12); a protruding magnetic tab (magnetic pole element 13) fixed to one end of the pivotably mounted driven member 11, the tab 13 comprising magnetic material and disposed to interact with the gap field over a portion of its arc of rotation; means for supporting the pivotally mounted driven member (i.e., shaft 12), said means providing the pivot point for angular movement of the member, and allowing the tab of the member to move through the vicinity of the gap field (Fig. 1); and a coil 16/17 of electrical conductor coupled to the fixed magnetic core 2 to provide magnetic flux therethrough

when the coil is supplied with electrical current, such that a magnetic field arises in the gap formed in the core which can impart motion to the pivotably mounted driven member by interaction of the gap field with the magnetic protruding tab on said member (abstract). Boon does not teach a micro-actuator, per se, with the core comprising a ferromagnetic material deposited onto a substrate top surface.

Zettler teaches a micromechanical motor and process for manufacture including a stator 6S manufactured of CVD tungsten deposited on a substrate 1 (Fig.3). Besides providing a micro-structure, Zettler's technique provides a motor which may be integrated into micro-systems utilizing semi-conductive manufacturing techniques (c. 1, lines 6-16).

It would have been obvious to one having ordinary skill at the time of the invention to modify Boon's actuator using the semi-conductive deposition techniques in Zettler since this would have been a desirable to miniaturize the actuator and integrate the micro-motor structure with semi-conductive manufacturing techniques.

Regarding claim 4, nickel-iron permalloy is a well known magnetic material.

Regarding claim 6, depending upon the position of Boon's armature, the tab 13 will be offset from a center of one of the gaps between the poles 3-5.

Allowable Subject Matter

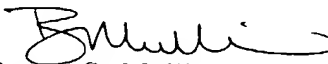
4. Claims 2 and 7-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 2, in Boon the magnetic tab and armature are not in the same plane. Regarding claim 7, Boon's armature does not comprise a hinge

structure for supporting the pivotably mounted driven member, the hinge formed of a narrow isthmus of material connected to the pivot point, and dimensioned to allow elastic bending angularly about the pivot. The remaining prior art of record does not remedy the deficiencies of Boon and Zettler, alone or in combination.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.


Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
May 15, 2003